New 30-year Climate Normals Released

➤ New normals period from 1981-2010

➤ Produced by NOAA's National Climatic Data Center (NCDC)

➤ Used to put current temperature and precipitation into historical context

National Weather Service Flagstaff, AZ

Created September 27, 2011

What are 'Normals'

A "normal" of a particular variable (e.g., temperature) is defined as the 30-year average. For example, the minimum temperature normal in January for a station in Flagstaff, would be computed by taking the average of the 30 January values of monthly-averaged minimum temperatures from 1981 to 2010.

In practice, however, much more goes into NCDC's Normals product than simple 30-year averages. Procedures are put in place to deal with missing and suspect data values. In addition, Normals include quantities other than averages such as degree days, probabilities, standard deviations, etc. Normals are a large suite of data products that provide users with many tools to understand typical climate conditions for thousands of locations across the United States.

What are 'Normals' used for?

Meteorologists and climatologists regularly use Normals for placing recent climate conditions into a historical context. NOAA's Normals are commonly seen on local weather news segments for comparisons with the day's weather conditions.

In addition to weather and climate comparisons, Normals are utilized in seemingly countless applications across a variety of sectors. These include: regulation of power companies, energy load forecasting, crop selection and planting times, construction planning, building design, and many others.
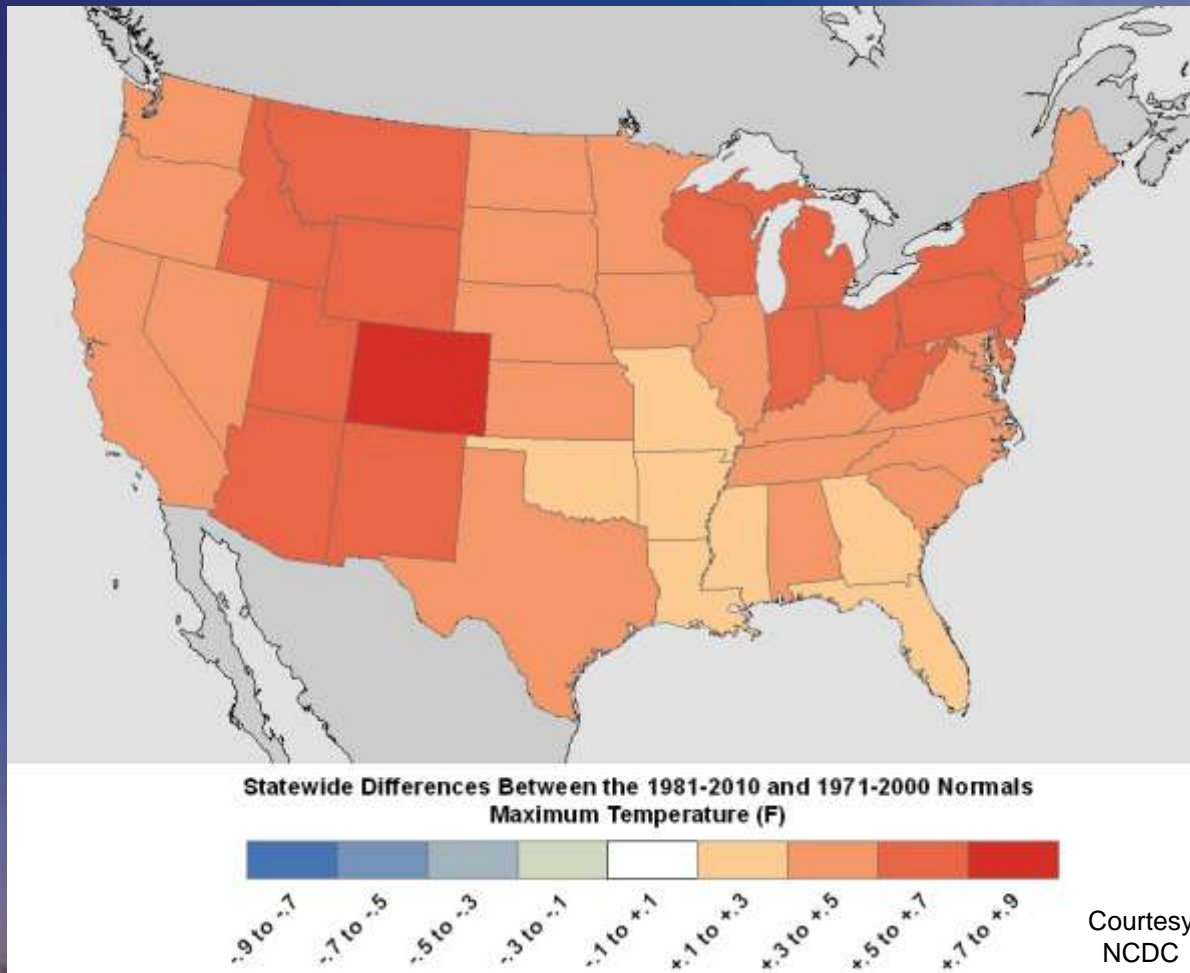
Courtesy NCDC

Changes in new normals compared to 1971-2000

The new normals no longer include the period 1971 to 1980 but instead include 2001-2010. Differences in temperature and precipitation between these decades will dictate how the new normals have changed compared to the ones used previously.
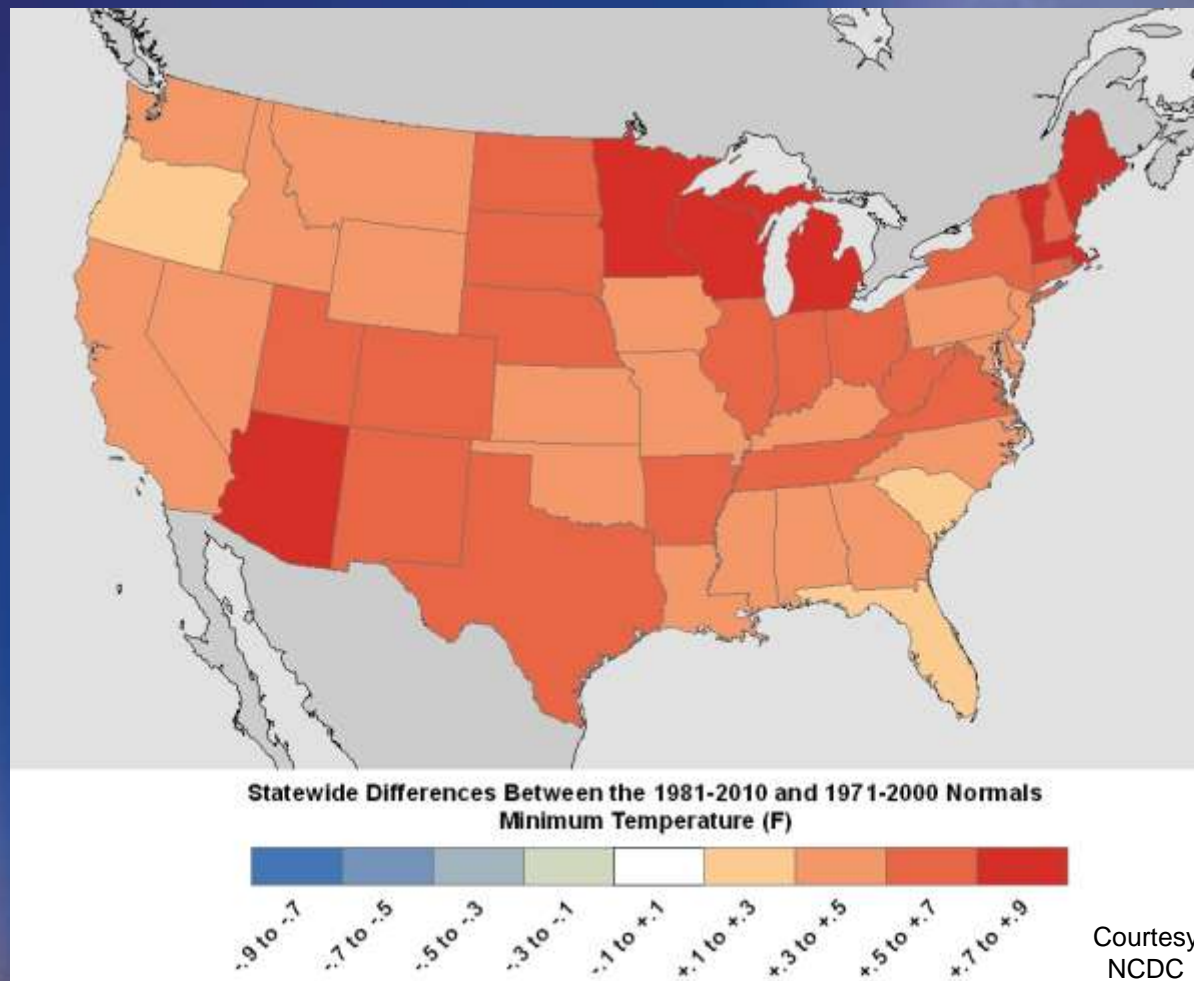
The decade of the 2000s was warmer on average than 1971-1980. This can be seen in the following slides.

Courtesy NCDC

Change in Statewide Annual Average Maximum Temperature

Statewide Differences Between the 1981-2010 and 1971-2000 Normals Maximum Temperature (F)

-.9 to -.7 -.7 to -.5 -.5 to -.3 -.3 to -.1 -.1 to +.1 +.1 to +.3 +.3 to +.5 +.5 to +.7 +.7 to +.9

Courtesy NCDC

Change in Statewide Annual Average Minimum Temperature

Statewide Differences Between the 1981-2010 and 1971-2000 Normals
Minimum Temperature (F)

-.9 to -.7 | -.7 to -.5 | -.5 to -.3 | -.3 to -.1 | -.1 to +.1 | +.1 to +.3 | +.3 to +.5 | +.5 to +.7 | +.7 to +.9

Courtesy NCDC

New Normals for Flagstaff

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
MAX TEMP	42.5	44.8	50.4	58.2	68.1	77.9	81.2	78.4	72.9	62.0	50.5	42.5	60.9
MEAN TEMP	29.9	32.1	37.0	43.3	51.6	59.9	66.1	64.2	57.4	46.8	36.7	29.6	46.3
MIN TEMP	17.3	19.3	23.6	28.5	35.0	41.9	50.9	50.1	42.0	31.5	22.9	16.8	31.7
PCPN	2.05	2.16	2.12	1.15	0.63	0.36	2.61	3.11	2.38	1.66	1.76	1.87	21.86
SNOW	22.5	22.2	21.9	6.7	0.6	0	0	0	T	1.2	10.6	17.9	103.6

How have the normals changed at Flagstaff?

The chart below shows that daytime highs are lower
for most months, while overnight lows are higher.
The net result is a 0.1 degree increase in annual
average temperature.

Change in 1981-2010 Normals vs 1971-2000

How have the normals changed at Flagstaff?

Change in 1981-2010 Normal Precipitation vs 1971-2000

The new averages for snowfall are higher for the Winter months, while Spring and Fall values are lower. The result is a 5.8 inch decrease in annual average snowfall to 103.6 inches.


Change in 1981-2010 Normal Snow vs 1971-2000
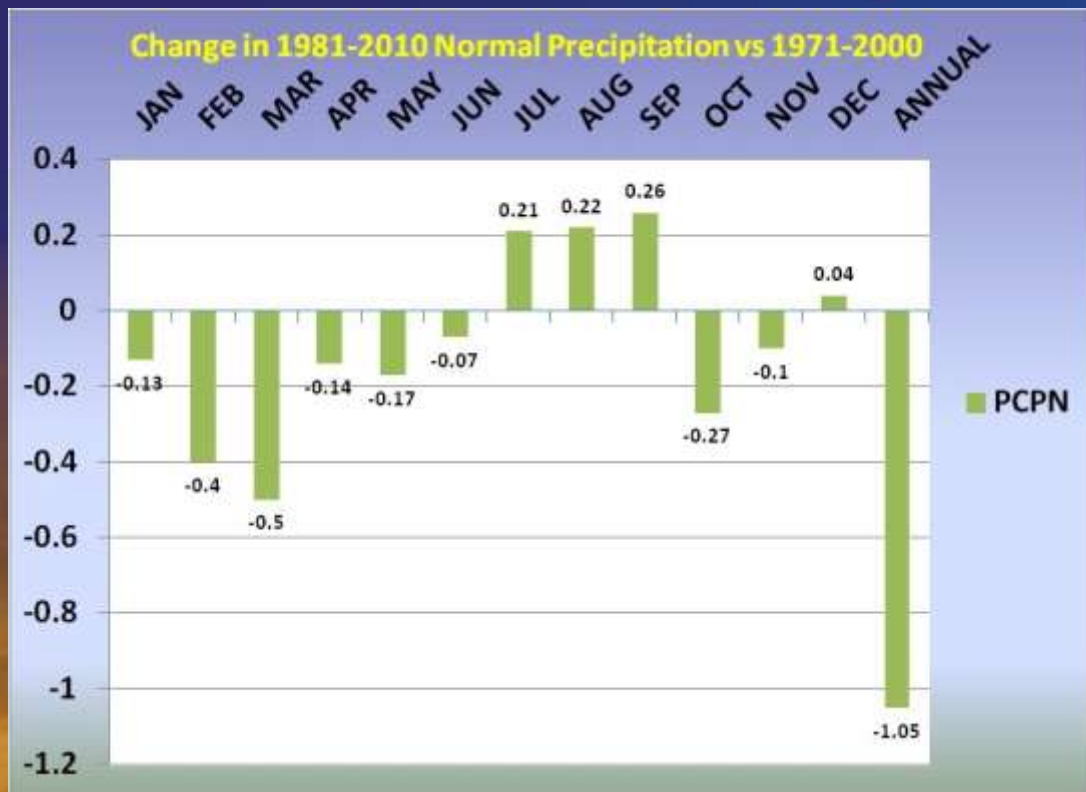
The chart above shows that average monthly precipitation is lower for most months with the exception of Monsoon season. Annual average precipitation is 1.05 inches lower.
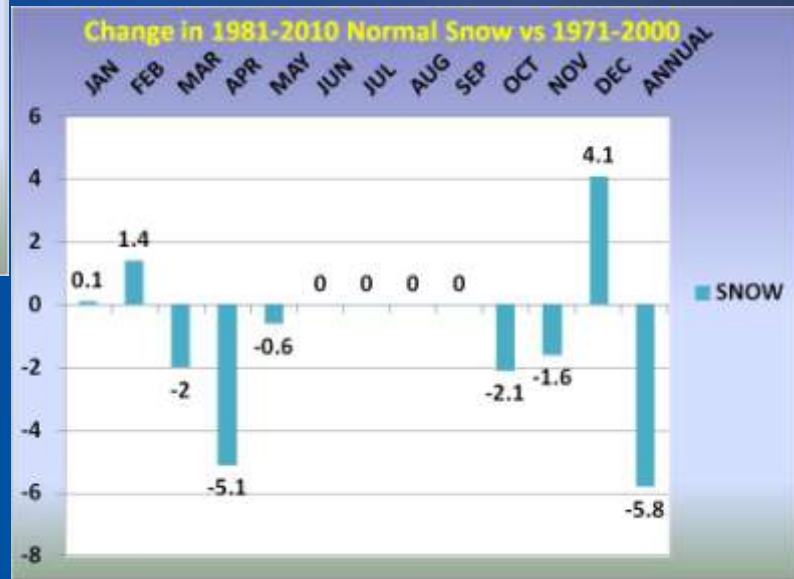
New Normals for Winslow

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
MAX TEMP	49.5	55.8	63.6	71.8	81.7	91.6	94.5	91.2	85.2	73.4	60.1	48.6	72.3
MEAN TEMP	35.2	40.3	47.0	54.3	63.6	72.7	78.2	76.0	68.7	56.3	44.0	34.6	56.0
MIN TEMP	20.8	24.8	30.4	36.7	45.4	53.8	61.9	60.8	52.3	39.3	27.9	20.6	39.6
PCPN	0.52	0.46	0.54	0.26	0.33	0.18	1.04	1.20	0.88	0.53	0.51	0.56	7.01

How have the normals changed at Winslow?

Daytime High temperatures are higher for all months at Winslow, while overnight lows are slightly lower. The result is a 0.8 degree increase in annual average temperature. Annual precipitation decreased by 1.02 inches.


Change in 1981-2010 Normals vs 1971-2000
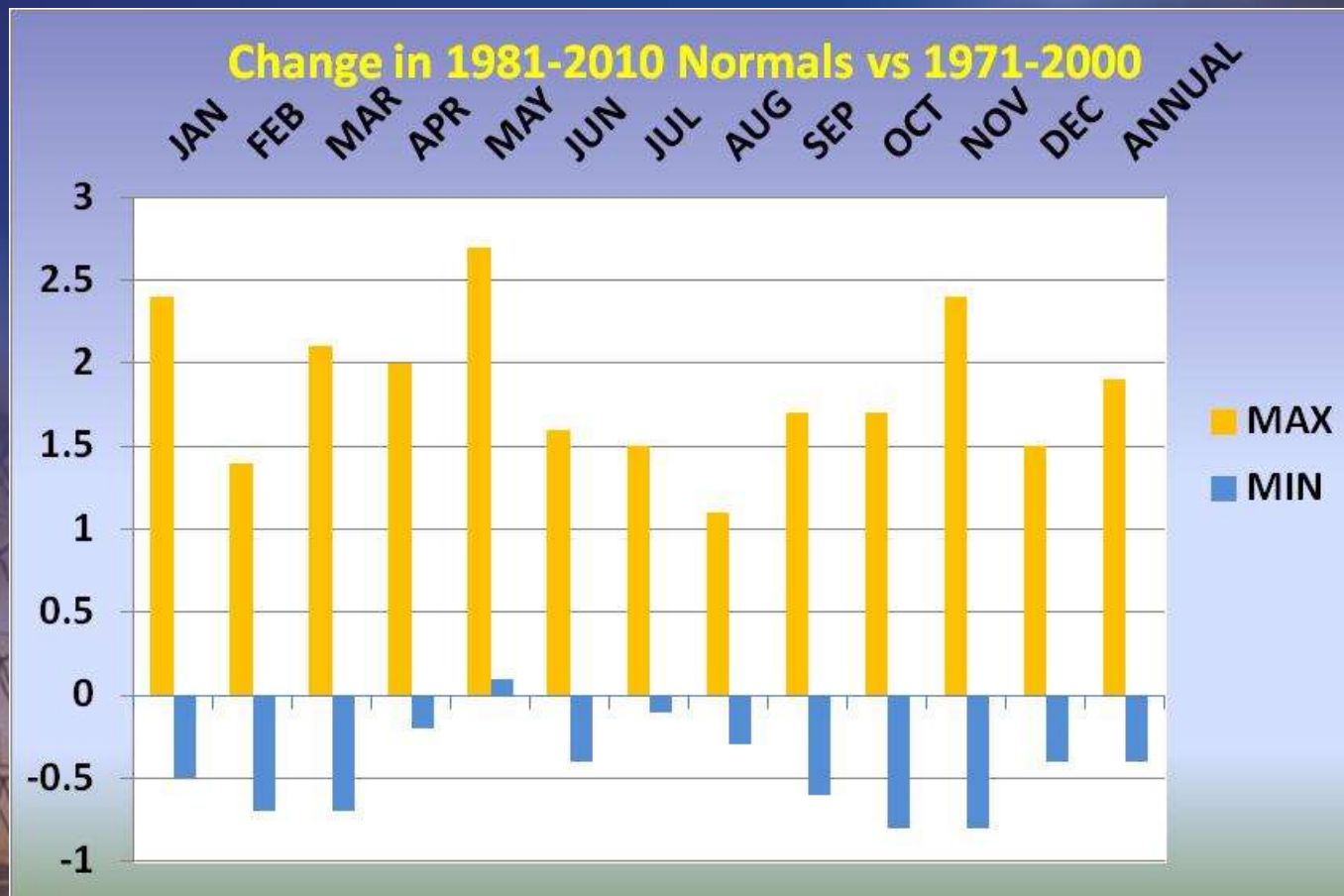
New Normals for Prescott

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
MAX TEMP	51.7	54.9	60.2	67.2	76.7	86.4	89.3	86.6	81.9	71.6	60.5	51.2	69.9
MEAN TEMP	38.8	41.6	46.4	52.7	61.6	70.6	75.6	73.5	67.6	56.5	46.0	38.3	55.8
MIN TEMP	25.8	28.3	32.7	38.1	46.6	54.8	61.8	60.5	53.3	41.5	31.6	25.3	41.8
PCPN	1.12	1.39	1.07	0.50	0.46	0.39	2.11	2.62	1.51	0.92	0.92	0.96	13.97

How have the normals changed at Prescott?

The new normals at Prescott show cooler daytime high temperatures for most months and warmer overnight lows year-round. Average annual temperature rose 0.2 degrees, while yearly average rainfall fell only 0.06 inches.
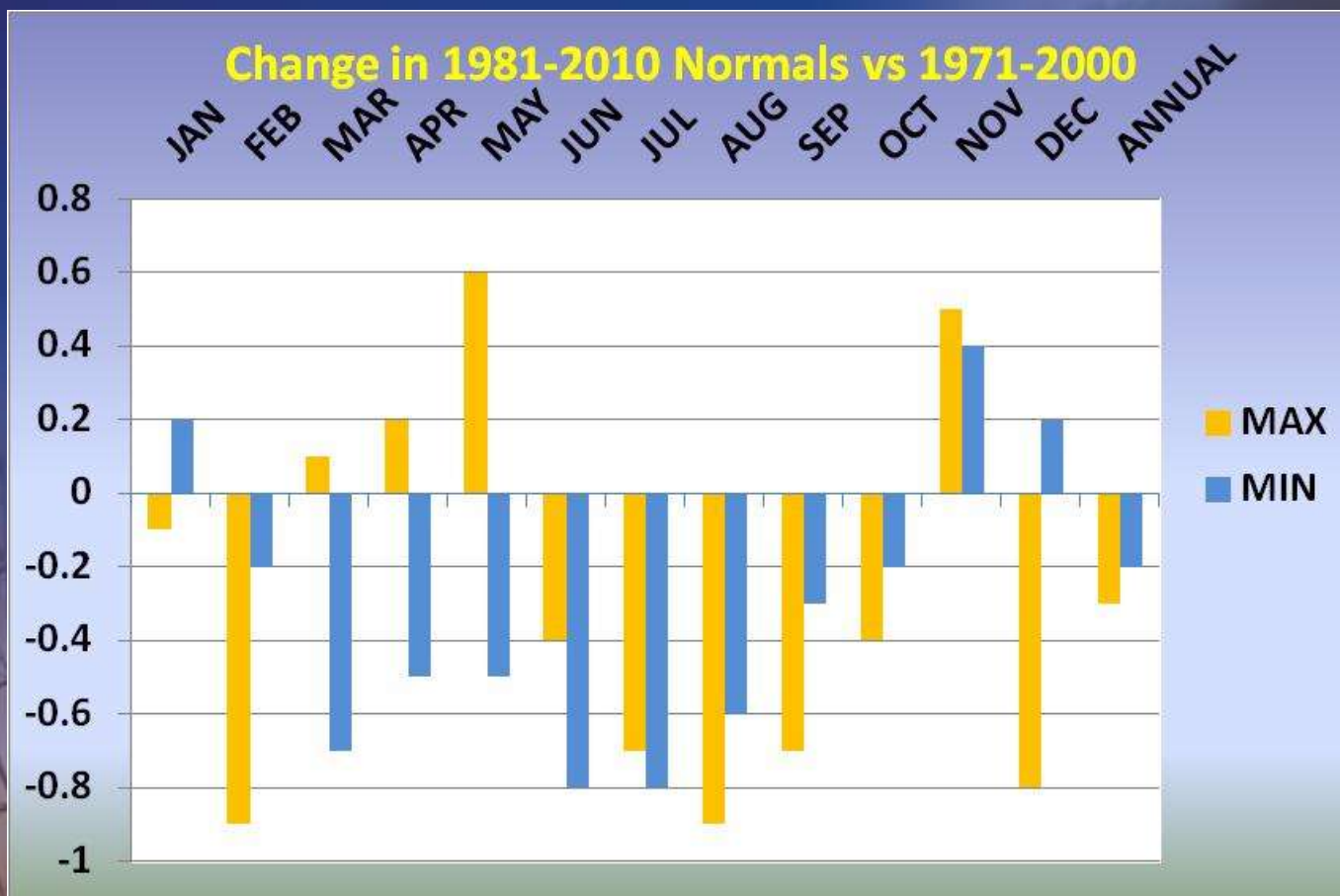

Change in 1981-2010 Normals vs 1971-2000
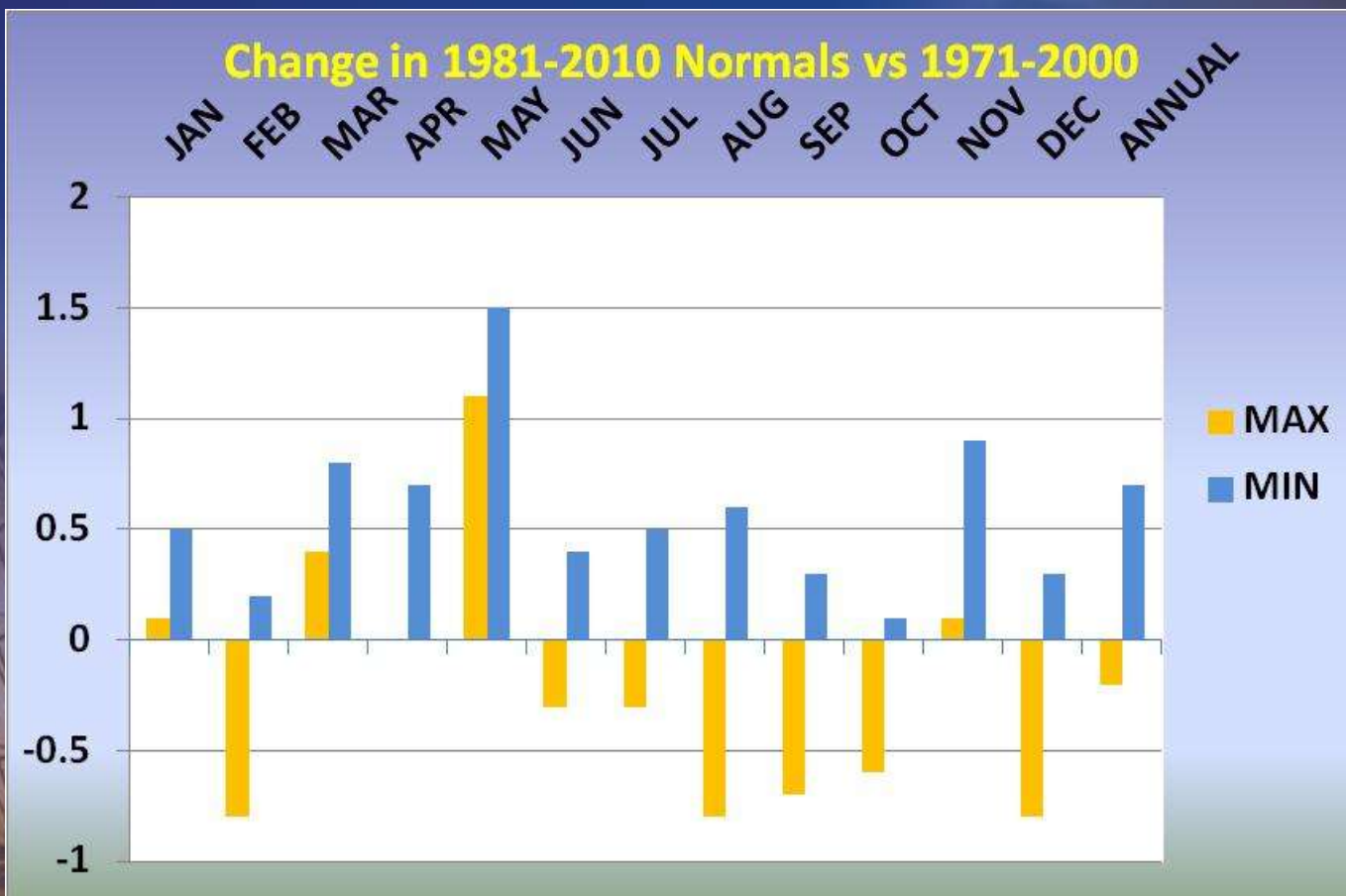
New Normals for Show Low

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
MAX TEMP	47.1	51.5	57.8	65.8	75.0	84.2	86.2	83.0	78.6	68.4	56.7	46.9	66.8
MEAN TEMP	35.1	38.9	44.3	51.0	59.6	68.3	72.4	70.1	64.8	54.2	43.5	35.1	53.2
MIN TEMP	23.1	26.2	30.7	36.2	44.2	52.4	58.6	57.1	51.1	39.9	30.3	23.2	39.5
PCPN	1.17	1.08	1.10	0.69	0.59	0.44	2.38	3.35	1.59	1.42	1.32	1.51	16.64

Climate Normals for many locations in Arizona can be found at:

http://www.wrcc.dri.edu/summary/Climsmaz.html

First click on a location

Then click on "NCDC 1981-2010 Normals"

Coop sites
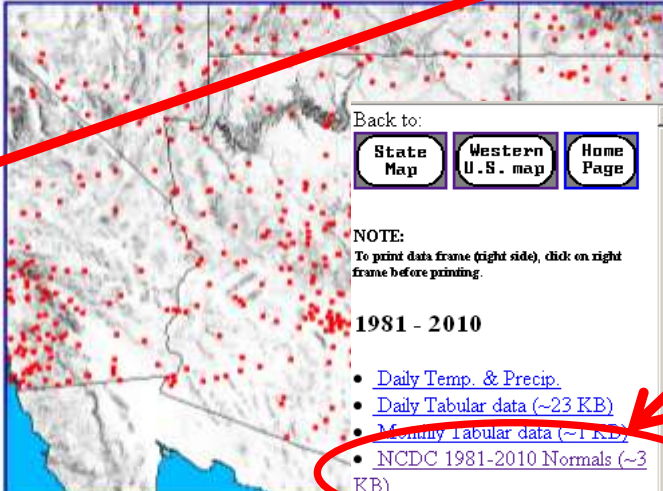
Arizona

Aguila
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Apache 6 Wnw
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Apache Powder Company
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Bear Valley
Beaver Creek Ranger Stn
Beaver Dam
Beaverhead Lodge
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Bisbee
Bisbee 2
Bisbee 2 Wnw
Black Mountain Mission

Select a site by placing mouse cursor over a site. Site name will appear in location box below the map if browser options.

Large boxes indicate stations that had reported during the month when these maps were last generated. Sm

Map last generated on 04/11/06.

If a location has multiple stations or more than one platform in the near vicinity, overlapping boxes may cre

the left in such cases.

Western Regional Climate Center, wrcc@dri.edu

Select a site by placing mouse cursor over a site. Site name

Back to:

[State Map] [Western U.S. map] [Home Page]

NOTE:
To print data frame (right side), click on right frame before printing.

1981 - 2010

- Daily Temp. & Precip.
- Daily Tabular data (~23 KB)
- Monthly Tabular data (~1 KB)
- NCDC 1981-2010 Normals (~3 KB)

1971 - 2000

- Daily Temp. & Precip.
- Daily Tabular data (~23 KB)
- Monthly Tabular data (~1 KB)
- NCDC 1971-2000 Normals (~3 KB)

FLAGSTAFF WSO AP, ARIZONA (023010)

Period of Record Monthly Climate Summary

Period of Record : 1/ 1/1893 to 12/31/2010

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Average Max. Temperature (F)	42.1	44.9	50.1	58.4	68.0	77.9	81.6	79.0	
Average Min. Temperature (F)	15.3	18.0	22.4	27.9	34.3	41.8	50.9	49.7	
Average Total Precipitation (in.)	2.11	2.01	2.07	1.25	0.62	0.45	2.46	2.73	
Average Total SnowFall (in.)	20.4	16.2	18.1	7.1	1.7	0.0	0.0	0.0	
Average Snow Depth (in.)	5	4	2	1	0	0	0	0	

Percent of possible observations for period of record.

Max. Temp.: 99.6% Min. Temp.: 99.6% Precipitation: 99.7% Snowfall: 90.1% Snow Depth: 81.1%
Check Station Metadata or Metadata graphics for more detail about data completeness.

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